

**Claims:**

1           1.     A communication network providing wireless communication within a premises, the  
2 wireless network comprising :

3           a wired network operating according to a wired protocol, the wired network having a first  
4 network segment and a second network segment;

5           a wireless terminal having a wired network protocol address;

6           a first access point coupled to the first network segment;

7           a second access point coupled to the first network segment; and

8           a data link tunnel that communicatively couples the second access point to the first access  
9 point when the wireless terminal is in wireless communication with the second access point.

1           2.     The communication network of claim 1 wherein the first access point is connected to  
2 the first network segment.

1           3.     The communication network of claim 2 wherein a protocol tunnel communicatively  
2 couples the first access point to the second network segment.

1           4.     The communication network of claim 3 further comprising a third access point  
2 connected to the second network segment.

1           5.     The communication network of claim 4 wherein the wireless terminal has a wired  
2 network protocol address respective to the third access point.

1           6.     The communication network of claim 5 wherein the first access point and the third  
2 access point are communicatively coupled with a protocol tunnel.

1           7.     The communication network of claim 6 wherein routed communication through the  
2 data link tunnel uses a different protocol scheme than when routed through the protocol tunnel.

1           8.     The communication network of claim 1 wherein the wired network operates under  
2 the Internet protocol.

1           9.     The communication network of claim 1 wherein the data link tunnel operates across  
2 the wired network.

1           10.    The communication network of claim 1 wherein the data link tunnel operates across  
2 a radio link.

1           11.    The communication network of claim 1 wherein routed communication from the first  
2 tunnel is not bridged onto the second network segment.

1           12.    A communication network comprising:  
2 a wired network having a first network subnet and a second network subnet;  
3 a first tunnel coupling the first network subnet with the second network subnet;  
4 a roaming terminal communicatively coupled with the first network subnet; and  
5 a second tunnel concatenated with the first tunnel to provide a logical extension of the first  
6 subnet for the roaming terminal.

1           13.    The communication network of claim 12, wherein the communication network  
2 further sends a data message destined to the roaming terminal as a first message under a first  
3 network protocol, the first message encapsulating a second message under a second network  
4 protocol, the second message encapsulating a message under the wired network protocol.

1           14.    The communication network of claim 13 wherein the second network protocol is a  
2   wireless network protocol.

1           15.    The communication network of claim 13 wherein the second network protocol is a  
2   wired network protocol.

1           16.    The communication network of claim 12 wherein the wired network operates under  
2   an Internet protocol.

1           17.    The communication network of claim 12 wherein the second tunnel operates across  
2   the wired network.

1           18.    The communication network of claim 12 wherein the second tunnel operates across a  
2   radio link.

1           19.    The communication network of claim 12 wherein a routed communication from the  
2   first tunnel is not bridged onto the second network subnet.

20. A communication network comprising:
- a wired network having a first network subnet and a second network subnet;
  - a first tunnel coupling the first network subnet with the second network subnet;
  - a roaming terminal communicatively coupled with the first network subnet; and
  - a second tunnel concatenated with the first tunnel to provide a logical extension of the first subnet for the roaming terminal without requiring the dynamic assignment of pseudo addresses.
21. The communication network of claim 20, wherein the communication network further sends a data message destined to the roaming terminal as a first message under a first network protocol, the first message encapsulating a second message under a second network protocol, the second message encapsulating a message under the wired network protocol.
22. The communication network of claim 21 wherein the second network protocol is a wireless network protocol.
23. The communication network of claim 21 wherein the second network protocol is a wired network protocol.
24. The communication network of claim 20 wherein the wired network operates under an Internet protocol.
25. The communication network of claim 20 wherein the second tunnel operates across the wired network.
26. The communication network of claim 20 wherein the second tunnel operates across a radio link.

27. The communication network of claim 20 wherein a routed communication from the first tunnel is not bridged onto the second network subnet.

28. A communication network providing wireless communication within a premises, the wireless network comprising:

a wired network operating according to a wired protocol, the wired network having at least a first network segment and a second network segment;

a wireless terminal having a wired network protocol address;

a first fixed access point connected to the second network segment;

a second fixed access point connected to the second network segment; and

a data link tunnel that communicatively couples the first and the second fixed access points via wireless communications only such that bridging communication data onto the second network segment is avoided when communications between one of the fixed access points and the wireless terminal require communication with the other fixed access point.

29. The communication network of claim 28 wherein the data link tunnel comprises a radio link between the first and the second fixed access points.

30. The communication network of claim 28 wherein the wireless terminal is a roaming terminal.

31. The communication network of claim 30 wherein the first fixed access point encapsulates a message in a packet for transmission via the data link tunnel to the second fixed access point

such that the message is supplied to the wireless terminal without the use of pseudo addresses which are dynamically assigned to roaming terminals.

32. The communication network of claim 28 further comprising a router that couples the first and the second network segments.

33. The communication network of claim 28 wherein the first network segment and the second network segment have different sub-network addresses.

34. The communication network of claim 28 wherein the wired network operates according to an internet protocol.

35. A communication network comprising:  
a wired network having a first network access point and a second network access point;  
a data link tunnel communicatively coupling the first network access point with the second network access point via wireless communications only; and  
a roaming terminal communicatively coupled to the first network access point wherein communications from the roaming terminal pass within the data link tunnel to the second network access point.

36. The communication network of claim 35 wherein the data link tunnel comprises a radio link between the first and the second network access points.

37. The communication network of claim 35 wherein the roaming terminal is a wireless terminal.

38. The communication network of claim 37 wherein the first network access point encapsulates a message in a packet for transmission via the data link tunnel to the second network access point such that the message is supplied to the wireless terminal without the use of pseudo addresses which are dynamically assigned to roaming terminals.

39. The communication network of claim 35 wherein the wired network operates according to an internet protocol.